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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/003,177	11/02/2001	Abdolreza Cheshmehdoost	DY0UP0206USA	6518

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EXAMINER
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DICKENS, CHARLENE

ART UNIT	PAPER NUMBER
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2855

DATE MAILED: 08/07/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application N .

10/003,177

Applicant(s)

CHESHMEHDOOST ET AL.

Examiner

Ex. Dickens

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☒ Certified copies of the priority documents have been received in Application No. 09/727,101.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

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The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 2 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In the claims it is not clear what element(s) constitutes a pair of torque-sensing flux detectors; wherein the at least one torque-sensing detector is element 18 and this element does not include any additional elements.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-7 and 10-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Garshelis in view of Horter et al. In regards to claims 1, 11, 13, 14, 16, and 17, Garshelis teaches a steering column or gear box (col. 3, lines 36, 37) having a torque sensor, said sensor/method of sensing comprising: a shaft 8 comprising magnetostrictive material; magnet pole (Figs. 3a-4) defining an axis that is aligned

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tangentially to a circumferential surface of shaft so as to induce a localized magnetic field in the magnetostrictive material; and a torque-sensing flux detector 6 positioned to detect a component of the localized magnetic field which escapes from the magnetostrictive material when the shaft is torqued. However, Garshelis does not teach a plurality of opposite magnet poles as claimed in claims 1, 11, 13, 14, 16, and 17.

Horter et al. teaches a plurality of opposite magnet poles for the purpose of providing an improved torsion monitor or sensor which is able to reduce energy requirement (col. 1, lines 56-59). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have a plurality of opposite magnet poles in Garshelis as taught by Horter et al. for the purpose of providing an improved torsion monitor or sensor which is able to reduce energy requirement. (col. 1, lines 56-59)

Claims 2, 3, 12, 15, 18: Garshelis teaches wherein the at least one torque-sensing flux detector comprises a pair of torque-sensing flux detectors position on opposite sides of the shaft circumferentially displaced from the pair of opposite magnet poles (Fig. 3f);

Claims 4, 5: Garshelis teaches permanent electro-magnetic pole;

Claim 6: Garshelis teaches wherein the shaft is hollow (col. 16, lines 60-62);

Claim 7: Garshelis teaches wherein the shaft is made substantially only from magnetostrictive matererial (col. 14, lines 56-60); and

Claim 10: Garshelis teaches a single magnet (Figs. 1-3);

Claims 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Garshelis in view of Horter et al. as applied to claim 1 above, in further view of

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Nonomura et al. Claims differ from Garshelis, as modified, with the recitations of a layer of low permeability material, which is in turn surrounded, by an outer layer of the magnetostrictive material and another pair of magnetic poles. Nonomura et al. discloses a layer of low permeability material, which is in turn surrounded, by an outer layer of the magnetostrictive material and another pair of magnetic poles (Figs 12-18) for the purpose of providing a torque measuring apparatus that cannot be influenced by any non-uniformity around the periphery of the shaft and which can more responsibly effect the accurate measurement of a transmitted torque through a widened range from the stationary state of the rotating shaft to the high-speed revolution of the same (col. 4, lines 23-30). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have a layer of low permeability material which is in turn surrounded by an outer layer of the magnetostrictive material and another pair of magnetic poles in Garshelis, as modified, as taught by Nonomura et al. for the purpose of providing a torque measuring apparatus which cannot be influenced by any non-uniformity around the periphery of the shaft and which can more responsibly effect the accurate measurement of a transmitted torque through a widened range from the stationary state of the rotating shaft to the high-speed revolution of the same (col. 4, lines 23-30).


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Dickens or the supervisor, Edward Lefkowitz, whose telephone numbers are (703) 305-7047 or 305-4816, respectively. Any inquiry of a general nature or relating to the status of this application should be directed to the

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receptionist or the customer service representative whose telephone numbers are (703) 308-0956 or (703) 308-4800 respectively. The fax numbers are (703) 305-3431 and (703) 305-3432.

  
cd/dickens

7/29/03

  
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